SIOUX CITY
PUBLIC LIBRARY
19 OCT 1894

GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

OFFICE: TRIBUNE BUILDING, NEW YORK.

Conducted by . . . . . Professor C. S. SARGENT.

ENTERED AS SECOND-CLASS MATTER AT THE POST-OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, OCTOBER 17, 1894.

TABLE OF CONTENTS.

PAGE.

EDITORIAL ARTICLES:—The Garden in Autumn 411
The Abuse of Public Parks 412
Prairie Woodlands ..... *Rev. E. J. Hill.* 412
Native Trees and Shrubs about Montreal, Canada.—IV ..... *J. G. Jack.* 413
Birds Injuring Apples ..... *Fred W. Card.* 414
NEW OR LITTLE-KNOWN PLANTS:—Two New Species of Ilex. (With figures.) *T. S. Brandegee.* 414
PLANT NOTES 414
CULTURAL DEPARTMENT:—Autumn-flowering Bulbs ..... *B. M. Watson, Jr.* 416
Autumn-flowering Perennial Plants.—II ..... *Robert Cameron.* 417
Forcing Vegetables ..... *William Scott.* 418
Quince-trees for Ornament ..... *E. P. P.* 418
CORRESPONDENCE:—The Forests of Minnesota ..... *W. S. D.* 418
Cephalanthus occidentalis ..... *Prof. D. P. Penhallow.* 419
RECENT PUBLICATIONS 419
NOTES 420
ILLUSTRATIONS:—Ilex trifolia, n. sp., Fig. 65 415
Ilex Californica, n. sp., Fig. 66 416

The Garden in Autumn.

A CORRESPONDENT mildly remonstrates with us on what he considers our partiality to spring gardens. He adds that even while the woods are beginning to glow with their richest colors we are celebrating the value of spring-flowering bulbous plants, and he asks why we do not say more in commendation of the beauty which gardens may be made to show in autumn.

We are not aware of any failure or neglect in the direction indicated. It is true that we do not always wait until spring to call attention to spring flowers. All that is delightful in an early garden is the result of preparation the year before, and we aim to give novices seasonable advice as to when and how to plant, so that when spring returns every root and leaf will be ready to start and every flower-bud waiting to open. After our long winters, the spring opening is always in some respects a new creation, and hardy flowers which greet us then make an impression more vivid and different in character from any which we experience at any other time. This is not because these early flowers are the most beautiful of the year, although nothing lovelier follows them; nor is it altogether due to a certain sub-conscious sympathy with them for having braved the storms of winter and dared to appear in the wild weather of our fickle spring; nor is it quite explained by the fact that our gardens have been cheerless for many months, so that these welcome flowers appear like lost friends restored; nor by the fact that this is the season of hope and that we see in the early flowers a promise of all the fruitful seasons are to bring. But all these together, and other reasons no less powerful, because born of imagination or sentiment, give a captivating freshness of interest to early flowers that are peculiarly their own, and there is little danger that we shall advocate too often or too strongly the practice of making a specialty of the spring garden.

Now, there is nothing in all this to indicate insensibility to the charms and graces of an autumn garden, especially in this climate, and it may be added that one argument we have used for a spring garden applies with equal force to the autumn garden. Many American families leave their homes when the hot weather approaches and journey to the mountains or to the sea. In summer their houses are shut up and their gardens may as well be desolate for all the enjoyment their owners get from them. We have, therefore, advocated the use of early-flowering shrubs and plants, and combinations which are especially beautiful from the time when the first Snowdrop opens until the close of the Rose season. Most of these summer wanderers return to their homes in September, and they will be there to enjoy their gardens through the autumn, and, of course, this is a good reason for making special effort to make these gardens attractive at this season. Besides this, it can be truly said that there is no season of the year which is comparable to our American autumn for the enjoyment of the woods and fields, and there is no time when one can wander in the garden with equal comfort or pleasure. Every year we have spoken of the wonderful variety of effects which can be produced by planting trees and shrubs with regard to the colors of their autumn foliage, and every year we have given specific notes as to the times when the different varieties turn and the peculiar tints they assume. We have also given special attention to the shrubs which bear ornamental fruit. The Dogwoods and Viburnums, the Privets and Barberries, the species of Celastrus, Vitis, Rose and many others have been noted with regard to the beauty of their fruits and the time of their ripening. To one who has not studied this ornamental feature of many shrubs, the scarlet and crimson, the deep purple and blue, the amber and pink and white of the clustered fruits, and the delicate bloom on many of them will be a revelation. The herbaceous plants which flower in autumn also have a distinctive beauty. Stately Sunflowers, Silphiums, Boltonias and many more make bold effects which are possible at no other time of the year; and there are lower growths, like Autumn Crocuses and Colchicums, which rival the dainty beauty of the earliest spring flowers. But there is no need to repeat the details we have often given of the material at command for making a rich display as the year closes. In other columns of this issue characteristic articles will be found, and we can think of no ordinary element of garden beauty possible for the season which has been overlooked or neglected.

If autumn brings to the owner of a garden any abatement from the keen delight he has taken in it, this is hardly due to satiety, although he has been enjoying it without cessation for half a year. Gardening is a pursuit of which one rarely wearies. But it is hard to keep up sustained enthusiasm in a small enclosure when all the effects attempted are displayed on so grand a scale without. Our beds of yellow flowers look dull when acres of Golden-rod stretch away beyond them; our clumps of purple and blue are insignificant when compared with the stretches of Asters by every roadside; the foliage on our Spiræas may be bright, but there is a forest of flame in sight, while the wayside shrubs, and even the herbs of the field, are glowing with colors as rich as any we can show. Of course, it is true that there are attractions just beyond the fence of the spring garden, but they are not quite in line with our own efforts. There is an unspeakable beauty in the fields and woods of spring, but it is not of that obtrusive kind which flares out in the autumnal landscape, and it is not a repetition on a limitless scale of what we are trying to produce in our shrubberies and flower-borders. This hopeless rivalry with universal nature gives a pathetic interest to autumn gardening, and this interest is not diminished by the apprehension of the killing frost which forever threatens in this latitude after the third week in September. Such apprehension revives our sympathies and stirs us to devise means of protection, and the greater our effort and solicitude the closer we are drawn to what can be rescued for a brief period of prolonged life. No doubt, the comfort and refreshment of spirit which an autumn garden can supply will make ample return for all the labor and thought expended on it; and it is to be hoped that all our readers who have not already made preparations for next

autumn will begin at once to plan and act, for there is not a day to spare.

Persons who have a full appreciation of the manifold uses of city parks and of their refreshing value to a city's population are often impelled to protest against some invasion of these green spaces. In a crowded city everybody wants room, and there is no end of projects to get hold of it, especially when it can be had for nothing, and the officials in charge of a city's public grounds often do practically give away park-land, every square foot of which is worth as much money as many an acre of good farm-land. In this city our parks are constantly threatened with confiscation for buildings or railroads or trotting-courses, or for a hundred other objects. We are accustomed to think, however, that they do things better in the Old World, and wish for some of the public sentiment which has protected the open spaces of London, for example, during so many generations; but the truth is that the same struggle is going on in all the great cities of the world. Not long ago the London *Standard* contained a vigorous protest from Mr. William Robinson, because a band-stand had been set up in the Temple section of the Victoria Embankment Gardens. It seems that the proprietors of certain newspapers had subscribed a sum of money to provide music gratuitously for the printers during the leisure of their dinner-hour, and the chairman of the Parks Committee of the London City Council answered Mr. Robinson that, inasmuch as the music cost the city nothing, it was the duty of the Council to provide a convenient stand out of the public money, and therefore they erected one in the gardens. To this Mr. Robinson made reply:

If the music-loving people are allowed to erect any structure to meet their wants in what is clearly intended to be a public garden, for the same reason other bodies may prevail on the City Council to allow them, for some frivolous end, to occupy and disfigure the gardens which belong to the people of London, and any one can see what this will lead to ultimately. It required a long and costly struggle to secure these parks, and it is clear that if the Council does not protect them from encroachment they will, in time, become mere parade-grounds. They were small enough originally, but a little grass and a few trees were refreshing. When, however, an ugly structure—or any structure—is set up in their centre, with asphalt walks leading to it, all possibilities of verdure and repose are destroyed. Evidently some people's idea of a public garden in London is one with a band-stand on one hand and a ginger-beer shop on the other, or we should not see these things in what ought to be quiet and refreshing green. One can realize the wild joy of Africans on finding such signs of civilization in a comparatively airy desert, but why they should be placed in the midst of a town-garden while there are music-halls and concert-rooms and ginger-beer shops all around them in the street, is not easy to see. It is not only to-day that must be thought of; every year will bring pretensions for refreshment-rooms or band-stands, and always, where possible, they will be placed in the middle of the open space or in some once pleasant lawn in it, thus destroying its unity of design and all its beautiful and refreshing effect.

Very plainly, there are men in London, and officials, too, as well as there are in more than one American city, who think that the only way to improve an open space is to build something on it, and who do not realize that grass and shrubs and trees are possessions of just as immediate practical value as pure water, good drainage, fresh air, hospitals, schools and churches.

Prairie Woodlands.

When pioneers began to settle in our primeval forests the natural impulse to plot in right lines led to the clearing of rectangular spaces, so that the surviving pieces of woodland are mostly bounded by straight lines. Time has, however, modified and beautified the abrupt and naked forest-borders that skirted the newly cleared fields. The taller trees along the margins have been overturned by the wind, lower ones have grown up with rounded tops and limbs which spread out to reach more light; an undergrowth of shrubs and herbs has sprung up by the enclosing fences, so that an unbroken bank of foliage stretches from the ground to the tree-tops.

In the woodlands of a prairie region these sloping borders are characteristic, and the bounding lines naturally curve with the windings of streams and valleys and the outlines of timber-clad hills. These masses of timber are often surrounded by treeless prairie or cultivated fields, the woods being left to supply the adjoining country with forest-products. The large trees have been cut off, but the ground is left to grow up with timber again, and under the stimulus of self-interest a kind of rude forestry is practiced. If the wooded areas are too large to be embraced with profit in adjacent farms, they may be divided into portions of a few acres, and be owned by several farmers living within easy distance. These small holdings in the groves are bought and sold with the main estate, and this also tends to their preservation and keeps them in larger tracts, so that one may sometimes follow belts of unbroken woodland for miles along a stream. Fed by springs which issue from the bases of the bordering slopes, even the small streams become perennial in the shade of the woods, though when followed away from the forest a dry bed may mark their course through the prairie in summer. The farmer thus becomes a conservator of the woodlands which help to preserve moisture for the soil, as well as to form one of the most pleasing elements of the landscape; for this region is monotonous as a whole—a plain with no striking features in the way of hills and mountains.

These wooded areas are generally used for pasture, frequently to their injury; but cattle and horses being chiefly kept, the undergrowth is not as closely cropped as when sheep have their range. Portions of the adjoining prairie are often included in the pasture, especially on the hills or along swampy lands. Points of timber jut out from the main body into the prairie, running down the hillsides or along ravines and watercourses, or out into swamps into which drier land projects. An occasional tree or small group of trees stands apart from the rest, still further varying the outline of the border, while larger groups, like islands in a sea of prairie, lie apart from the main body. The use of the tree-covered ground and the adjacent prairie for grazing often saves these isolated trees and groups; for where land is devoted to the plow they are apt to be cut down, as may be observed where the rich soil of the prairie comes close up to the woods. If in wettish grounds the trees may be spared because they do not encumber a meadow from which hay is taken, and which may be pastured only a part of the year. The limbs of these detached trees or groups come down low about the trunks, the tops are round and spreading, and a sturdy and symmetrical habit has been developed by the free play of light and air on every side.

A pleasing feature of these woods is the way in which the border merges into the green of the prairie. Belts of trees lining low and swampy prairies, or the sloughs with which they are interspersed, become attractive, or even beautiful, notwithstanding many of their unpleasant surroundings. A continuous mass of foliage joins the green below with that at the tops of the tallest trees. Willows and Alders, the Swamp Rose, Button-bush and Osiers of various kinds are followed by Viburnums, Sumachs and Sassafras. These and other tall shrubs or low trees furnish a gradual or undulatory slope from the rank Grass, Reeds and Rushes of the swamp to taller Elms and Swamp Maples, and the Oaks and Hickories of the drier background. The wide variety in the tints of green foliage makes these borders attractive in summer, and when autumn kindles its fiery colors in the leaves they are fairly radiant with beauty. Various shrubs connect the dry upland woods with pasture and meadow. The leaves and glandular twigs of the Hazel are not agreeable to browsing animals, and it becomes common along the margins of woods and fields, or forms outlying masses between the field grasses and the foliage of Oaks and Hickories. In

lower and richer ground the Hazel is replaced by the Crab Apple, the Wild Plum and different species of Thorn.

The prevalence of Oaks with smooth and glossy leaves gives to many of these woodlands a peculiar distinctness under the glow of the summer sun. A shimmering light plays upon them, as well defined, although not as bright, as that which glances from a water-surface, and these bright areas catch the eye from a distance, and in the broad sweep of the green landscape these forest-masses rise out of the general level as sources of clear mellow light.

Chicago, Ill. *E. J. Hill.*

Native Trees and Shrubs about Montreal, Canada.—IV.

ULMUS AMERICANA, the American or White Elm, is an abundant tree here, and specimens with trunks three or four feet in diameter are frequent. It shows as much variability in form as it does in New England. U. fulva, the Red or Slippery Elm, called "Orme gras" by the French Canadians, is more common than the American Elm in some localities, and is most abundant on moist rocky soils or near water. U. racemosa, the Cork-barked or Rock Elm, is recorded in Macoun's *Catalogue of Canadian Plants* as rare in the eastern townships of the Province of Quebec, and extending westward throughout Ontario in the limestone areas. The "eastern townships" comprise the counties just north of Vermont and New Hampshire. The Cork Elm is also found in Huntingdon County, and probably other counties in this extreme corner of the Province. It occurs on Montreal Island in the vicinity of St. Laurent, along the upper Lachine Road, and probably in other localities, forming fair-sized trees, with characteristic corky, strongly depressed branches.

Celtis occidentalis, the Nettle-tree, Hackberry or Sugarberry, is the "Bois inconnu" of the French Canadians. It is considered rare, and seems to be of somewhat scattered distribution, not generally occurring in large numbers together. Montreal is about its most northern known habitat, although some small specimens have been found on the Ottawa River. The late Charles Gibb, in an essay recommending the introduction of hardy trees into the Province, mentions the Hackberry as worth bringing from the west, not knowing that it was thriving naturally at home. On St. Helen's Island, directly opposite the Montreal city wharves, there are many specimens of this tree growing in the natural woods, two of the largest measuring about seven feet and eight and a half feet in circumference. On the banks of the St. Lawrence between Montreal and Lachine, and bordering the famous Lachine Rapids, there are many good specimens to be seen, one rugged old tree measuring over eight and a half feet in circumference of trunk at four or five feet from the ground, and this trunk nearly touches that of another almost equally large. Fine specimens also occur at St. Anne's, on the western extremity of the island, and there is a good group of the trees on the south side of the St. Lawrence a couple of miles above the mouth of the Chateauguay River. The Hackberry is an interesting tree, though readily mistaken for an Elm by a careless observer. It is worth noting that several species of the peculiar gall-making insects (Pachypsylla), which affect the tree farther south, have followed it in its northern range.

Juglans cinerea, L., the Butternut or White Walnut, is common. The Black Walnut, J. nigra, L., is not indigenous, but is hardy, and has been planted in timber experiments farther north.

Hicoria ovata (Carya alba), the Shag-bark Hickory, is found on Montreal and other islands in the St. Lawrence, and is plentiful on the rocky ridges along the south shore of the St. Lawrence through Caughnawaga and Chateauguay. This tree and the Butternut furnish the principal "nutting" in the autumn, as the Chestnut does not thrive in this climate. H. minima (Carya amara), the Bitternut, Pignut, or, as it is called in some parts of New England, "Hog Walnut," is more common than the Stag-bark Hickory, and is commonly found in moist situations. Both of these Hickories are only found as small saplings on the Indian Reservation, because the wood is eagerly sought for by the Indians for their various manufactures. A small nut resembling that of H. glabra is sometimes collected by the habitants at Chateauguay, but I have not seen the tree or obtained other specimens. The nuts are sometimes locally called "Sweet-bitter Hickories," probably on account of some slight likeness to the Bitternut in nut or tree.

Myrica Gale, Sweet Gale, is common in wet places and along banks of ponds and streams.

Betula lenta, the Sweet or Black Birch, is common, and grows to large size. B. lutea, the Yellow Birch, is also abundant. B. papyrifera, the Canoe or Paper Birch, is not so common as it once was, but is still frequent in woods. B. populifolia, the small White Birch or Gray Birch, is common on the borders of woods or in openings in woods, especially on the poorer soils.

Alnus incana, the Speckled Alder, is abundant. It is common to find old plants which regularly bear only pistillate catkins. In its wide range in this country, as well as in Europe and Asia, this Alder shows much variation, quite as much as in the cases of some plants where varietal or even specific names have been established.

Corylus rostrata, the beaked Hazel-nut, is the common species of this region. The nuts are often collected, and, though small, they are quite as sweet and edible as the European Filberts of the markets.

Carpinus Caroliniana, the Hornbeam, or Blue Beech, as it is usually called in this region, is common on wet, rocky soils, or near water. It sometimes grows singly, but more often several small, inclined stems rise from the same root or base.

Ostrya Virginica, the Hop Hornbeam, better known as Lever-wood or Iron-wood, is common and forms fair-sized trees, and the wood is much valued for its strong, tough, unbending character.

Quercus macrocarpa, Bur Oak, or Mossy-cup Oak. This is the common White Oak of the region about Montreal, although it has generally been mistaken for Q. alba, and is so given in some local lists. It shows very great variability, and some extreme forms certainly show much likeness to Q. alba in leaf, acorn and cup. In the woods it forms first-class timber-trees, and in the pastures and fields handsome broad-spreading, shade-giving specimens. The "bur" or "mossy" character of the cup is generally much less developed than it is in some of the western forms, and the corky character of the bark of the branches is also often much reduced.

Quercus alba, the true White Oak, may be considered as comparatively rare or uncommon in this locality, though probably once more common than it is now. It is occasionally seen in the woods on the south side of the St. Lawrence. Professor D. P. Penhallow, in *Notes on the Flora of St. Helen's Island, Montreal*, published in the *Canadian Record of Science* for September, 1891, gives Q. alba as one of the trees on the island; but Q. macrocarpa is probably referred to as it occurs there and is not mentioned.

Quercus bicolor, the Swamp White Oak, is not a rare tree on the Island of Montreal, and is very common in some localities in the woods on the south side of the St. Lawrence. It is most often found on rich, rather low moist ground, with underlying rocks or gravel. It becomes a fine, large tree about as useful as either of the preceding species, and undoubtedly generally mistaken for them. It is best distinguished from them by its more leathery, lesser-lobed leaves, which are usually velvety downy on the under side, by its longer-stalked fruit, and especially by the old bark of the branches splitting in the direction of the branch and curling up in thin flakes along the branches.

Quercus rubra, the Red Oak, appears to be the only species of the Black Oak group, having bristle-pointed leaves and requiring two years to mature fruit—which occurs in

this region. It is found almost everywhere in woods occurring from the top of Mount Royal through the surrounding country. It naturally extends much farther north, and some attempt has been made to establish a botanical variety out of the boreal form, but no difference can be observed between the trees as they grow about Montreal and occur in southern New England.

Fagus ferruginea, the American Beech, is common, and becomes a large tree, though the wood is not much used, except for fuel. The edible nuts are often found in the markets; they furnish food for such birds as blue jays, for squirrels and other rodents, and for the bears which are found in the mountains within fifty miles, and which are said to climb the trees in search of the small sweet fruits.

Arnold Arboretum. *J. G. Jack.*

Birds Injuring Apples.

WHEN the orchardist, after suffering from attacks of insects, fungi, small boys and other depredators, finds himself attacked by those he has always considered his friends, he may be excused for some feeling of discouragement. Yet such has been our experience in apple-growing at the Experiment Station farm this summer. The old orchard has far outlived its usefulness and is an object of pity rather than of pride. It has had to contend against blight, borers, butchery instead of pruning, and numberless other obstacles. Yet, in spite of them all, a few of the trees still retain some vitality, and they promised to yield a fair crop. As the apples approached maturity, however, they were attacked by the birds to such an extent, that from trees which should have yielded two or three bushels, no fruit was harvested. To leave them until fit to pick meant not to pick them at all. The injury has been worse on the fall and early-winter apples, though even the late varieties have not been wholly exempt from attack. The injury is doubly great because, after a bird satisfies himself for the moment he leaves that apple and may never return to it again, simply taking another the next time he is apple-hungry. Whether he returns or not, the apple is ruined.

At first it was thought that the blue jays were responsible for the mischief, but it was soon discovered that they were not alone in the depredation. Blackbirds, robins, red-headed woodpeckers, yellow-hammers, brown thrushes and one or two other species have been observed working at the fruit. The blue jays are, perhaps, the worst in proportion to their numbers, but the robins and blackbirds are more numerous and consequently do more damage. The blackbirds, in particular, frequent the orchard in large flocks and are capable of doing an immense amount of damage.

Juicy apples seem to be preferred, even though very hard. In the summer many of the Crabs were injured, but none of the Sweet June variety. This has been an exceedingly dry season, and the ordinary supplies of bird-food are, no doubt, somewhat deficient. It was also suggested that they might attack the apples to get the moisture, although there were tanks of water not far away. Five troughs of water were, therefore, placed in the orchard at convenient points and watched for a time. The birds very soon found and made use of them, but continued to eat apples just the same. It is possible that had this been done before the habit had become so firmly fixed it might have mitigated the injury somewhat. On the whole, however, the indications are that the birds eat the apples because they like them. So far as I know, this is a trick which eastern birds have not learned, and the eastern grower may earnestly hope that they will not.

Agricult'l Exp't Station, Nebraska. *Fred W. Card.*

New or Little-known Plants.

Two New Species of Ilex.

EXPLORATION of the high mountains of the Cape region of Lower California has brought to our knowledge many new and interesting plants and trees. Quite unexpected, however, was the discovery of two species of Ilex, a genus that is without representatives in the western part of the United States. Both these species of Ilex grow in cañons near running water and about the highest summits of the mountains between La Paz and Cape St. Lucas.

Ilex triflora* (see p. 415) is a handsome tree, and well worthy of cultivation in Alta California, where it would probably prove to be hardy, for it is often subjected to heavy frosts in its habitat at 6,000 feet elevation above the sea. It grows to a height of fifty feet or less, and in general shape resembles a Lombardy Poplar; the branches are very numerous, short, horizontal and repeatedly divided in all directions, so that, excepting at the trunk, the tree presents to view a mass of leaves impenetrable to the sight. The trunk, a foot or more in diameter, is nearly smooth, of a grayish color, and visible only for about six feet from the ground. The tree is not very abundant, and, unless to be found on the mainland of Mexico, will always be rare.

Ilex Californica† (see p. 416) is more common, and not as handsome. It is more properly a large bush than a tree, although often it is undoubtedly a small tree. It grows to be ten or fifteen feet high; the branches are widely spreading and the leaves thick. I have never seen it in flower, but have been able to find plenty of fruit in October and January. It probably blooms early in summer, for dried remnants of old flowers can be seen about the fruit in October. I. triflora blooms in October.

San Diego, Calif. *T. S. Brandegee.*

Plant Notes.

Quercus macrocarpa.—The Bur Oak does not transplant as easily as the Swamp White Oak or the Pin Oak, because these last two naturally make many more small roots. The Bur Oak, however, and most other Oaks can be safely transplanted if they are pruned back almost to the main stem, and thus trees from four to six feet high are pretty certain to survive and thrive. In time the Bur Oak becomes a massive tree, with that expression of rugged strength which characterizes the best Oaks, but it is also a beautiful tree when young, and some specimens about twenty years old, which we have lately seen, were exceedingly interesting. It branches low and into fine form, makes a strong growth, and when young has dense and heavy foliage. Our native Oaks are strangely neglected by American planters. The general impression seems to be that few of them can be safely transplanted, and that they grow so slowly that the planter will never see them develop into anything like beauty. The truth is that they are not exceptionally slow in growth; that most of them have a peculiar beauty of their own when young, and, in short, that they are among the very best of our trees for use in parks and large places; while in smaller places, where only one good specimen tree can be grown, it is often the case that some species of Oak will be the best possible selection.

Salvia splendens, Clara Bedman.—This variety of the well-known Scarlet Sage is a good example of the changes in character and habit which are occasionally developed in old-fashioned garden-plants under cultivation. Mr. C. W. Matthews, of the Kentucky Experiment Station, writes that plants of this variety from seed sent out last spring by a Philadelphia firm have shown a marked superiority over the type during the season just closing,

* Ilex triflora.—Tree 15 m. high or less, with short, spreading branches; young shoots, petioles and peduncles rather densely pubescent; leaves elliptic-lanceolate, entire or spinose-serrate in the upper half, acute, 5 to 8 cm. long, sparingly hairy above and below, and green on the upper surface, whitish and veiny beneath; petioles 5 to 8 mm. long; peduncles 1 cm. long, usually 3-flowered on pedicels, about equaling the peduncle, and bracteate at base; inflorescence coarsely short-hirsute; floral organs in fives; segments of the corolla strongly united in the lower fourth; ovary 5-celled; fruit not seen.—La Chuparosa, Baja California.

† Ilex Californica.—A bush or small tree, 3 to 4 m. high, nearly glabrous throughout; leaves thick, coriaceous, elliptic, oblong-elliptic or oval, 6 to 12 cm. long, 2 to 3½ cm. wide, remotely shallow-serrate, veiny beneath, not shining; flowers in axillary, shortly pedicellate clusters; calyx 4-parted, the segments ovate, scarious above; corolla not seen; fruit the size of a pea, smooth; cocci 4, the testa incompletely lacunose.—La Chuparosa and Sierra de la Laguna, Baja California.

when the two were grown side by side. The new variety is darker in foliage and somewhat dwarfer and more compact than the ordinary form, but its special merit was brought out by the prolonged drought of the past summer. For a long time during the hot and dry weather plants of the old form would drop their flowers—at least, the corolla, and often the calyx as well—almost as fast as they were produced, leaving only bare and unsightly stems, while the newer variety, although, of course, checked in its growth, persisted in displaying abundant flowers throughout the heat and drought. For flower-lovers who lack an abundant supply of water for bedding-plants, this power of endurance through such adverse conditions as those of the past summer is a quality well worth considering when selecting plants in the spring.

Lychnis Flos-cuculi.—What seems to be a variety of the well-known Ragged Robin was sent out by some European nurserymen two or three years ago burdened with the name of Plenissima semperflorens. The plant is apparently as hardy as the type here, and it blooms constantly in the open air from midsummer onward. The flowers, in very open terminal panicles, are lightly carried on thin stems eighteen inches long; they are smaller than those of the type, but quite double, and of a singularly deep rose color. The loose clusters on the arching stems are very graceful, and a dozen of them in a slender vase appear to very good advantage. The plant resembles the type, having very narrow and almost linear leaves, and, besides its value in the border, it is said to be useful for winter-flowering.

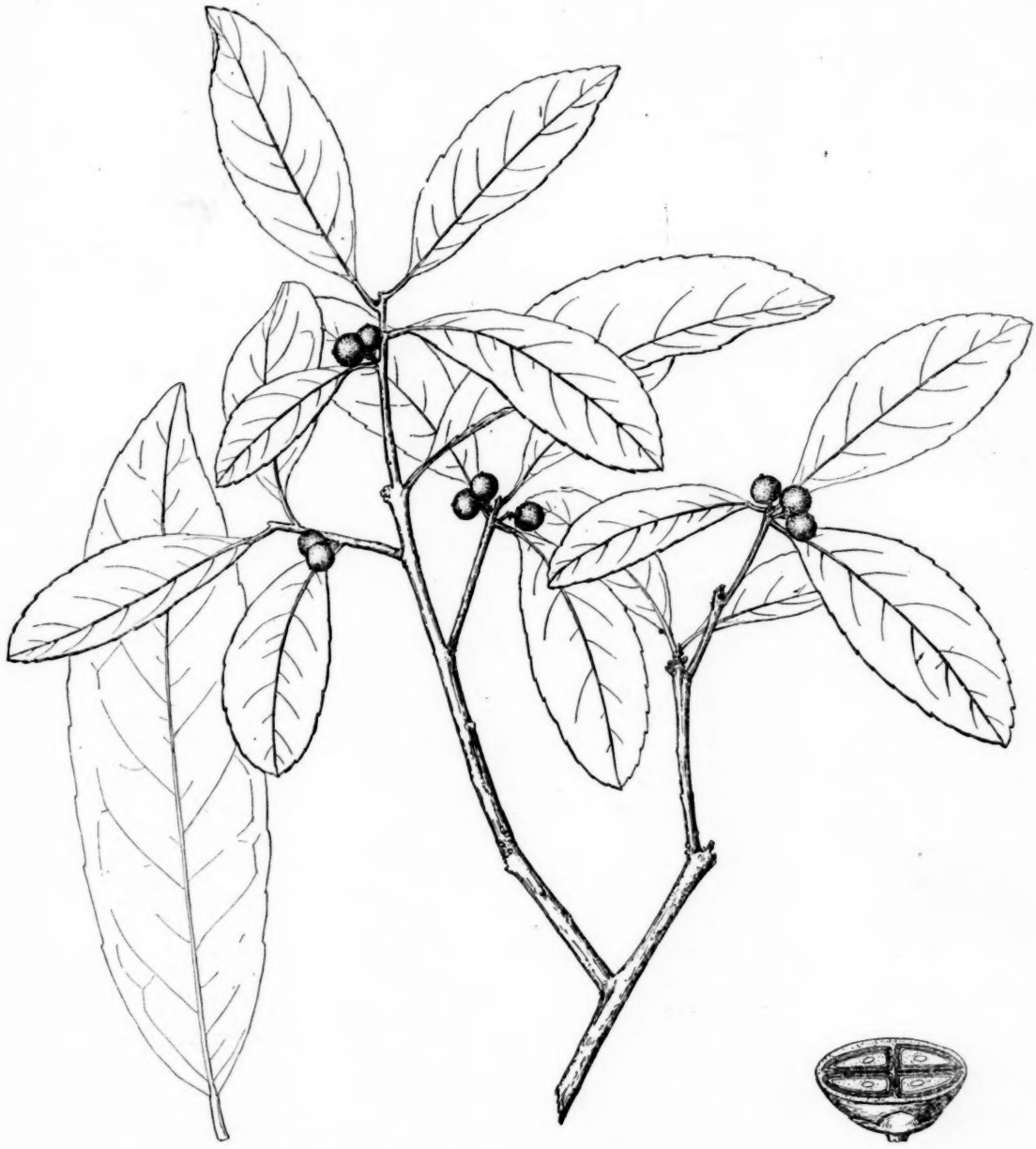

Fig. 65.—Ilex triflora, n. sp.—See page 414.

Fig. 66.—Ilex California, n. sp.—See page 414.

Cultural Department.

Autumn-flowering Bulbs.

Colchicums.—These, the Meadow Saffrons, are, by far, the showiest of the class. Beginning to bloom in the middle of August, they continue through September, even into October, covering the ground with their bright purple flowers. They are at their best when planted thickly in clumps in garden-beds; in England they are often naturalized in the grass or wild garden; the low price of the bulbs would make this an experiment easy to try here. The soil should be trenched and plenty of well-rotted barnyard manure worked in; a sandy loam is preferable. Plant as early as possible; the bloom the first season is sometimes a failure on account of the bulbs starting into flower in the packing-cases. The bulbs, which are long, should be set deep, the tips nearly two inches below the surface; in late autumn they should be covered with a light layer

of pine boughs or needles. Leaf-growth begins in April, when still further dressing can be given, stirring the manure into the ground among the plants. The leaves grow a foot or more high; plenty of room should, therefore, be given for them to expand, while free access to air and light conduces to the good development of the plants. With the leaves come the seed-pods, which should be at once removed, to prevent unnecessary labor to the plant, unless needed for new stock. Ordinary propagation is by division, but the bulbs are so cheap it is better to buy them. Treated in this way, never lifting them in early summer, as Tulips and Hyacinths are sometimes lifted, they will continue to flower for several years; when they do begin to deteriorate they must be dug, separated and replanted, just after the leaves turn yellow in July.

Colchicum autumnale and its varieties are the best known; the type is a bright, light purple, with white throat; the variety album is a good pure white; atropurpurea is dark purple; variegatum has checkered flowers, but not variegated leaves, as is sometimes thought; there is also a double purple and a double white.

Colchicum speciosum is finer, larger, and of better color, shape and substance than the preceding. It is easily handled, perfectly hardy, and in every way a most desirable plant. It is a native of the Caucasus, and is described and figured in the London *Garden*, vol. xi., page 548, a colored plate.

Colchicum Parkinsoni, figured in Parkinson's *Paradisus Terrestris* (1629), p. 155, has curious checkered or tessellated flowers, with comparatively low and wavy foliage. It makes a pleasing variety to the group, but is not so easily grown as the others.

There are still other species obtainable, some of which bloom in spring; these are hardly suitable for ordinary cultivation.

Colchicum autumnale has been used in medicine as a remedy against gout. Toxic qualities are ascribed to the corms, and curious tales are told, unverified here, of the color-effects on one's fingers if they are brought nearly in contact with the flower at certain stages of its bloom; it is said they will turn "a livid greenish yellow" or a "bright saffron."

Autumn Crocuses.—Another class of autumn-flowering plants is found in this genus. The general characters are much the same as shown in the spring-blooming kinds, but there is not the same variety in coloring. They are in flower from the middle of September, through October, and occasionally into November. Cultural directions are the same as given above for Colchicums; there is generally a leaf-growth in autumn, which, however, need cause no anxiety, as the foliage is apparently unhurt by frost.

Crocus speciosus is, in my opinion, the best; it is now, October 3d, in full bloom, of a bluish purple color, with white marks, very delicate in tone, far surpassing the better-known spring-flowering species. The stigmas are large and of a vivid orange color, which blends well with the purple of the petals, making altogether a very bright appearance in the garden. Like the Colchicums, they should never be lifted until they need to be separated because overcrowded; they also should be planted in masses. The bulbs are inexpensive; it seems unaccountable that such a lovely plant should be so uncommon in gardens.

Crocus sativus is not as satisfactory a plant as the preceding; the coloring, shape and texture of the petals are inferior, and it is neither so abundant a bloomer nor so easily handled. This is the true saffron; it is from the stigmas of this plant that the saffron dye of the classical writers was obtained, as many as 4,000 flowers being required to make a single ounce. There is another plant known sometimes as Saffron in our gardens, Carthamnus tinctoria, which belongs to the Compositæ.

Crocus Boryi, white, with a yellow throat, and C. zonatus, C. nudiflorus, C. pulchellus, C. Byzantinus of various shades of lilac, with white and yellow markings, the large characteristic orange stigmas always being in evidence, are other species hardy here and easily obtained. Krelarge and Van Tubergen offer still other sorts, all inexpensive. In the London *Garden*, vol. xxx., page 476, there is a colored plate and description of thirteen varieties.

Since these Colchicums and Crocuses have no foliage of their own when flowering, the bloom springing directly from the bare earth, it is well to provide some low-growing plant as a carpet. English Ivy is recommended, where it proves hardy; Lysimachia nummularia and some Sedums are excellent; a low-growing Artemisia, A. rupestris, A. alpina or A. frigida, might be used; Periwinkle, Vinca minor, is too dense.

Zephyranthes candida is tender here in the open air, but would probably be hardy farther south; it is a lovely pure white Crocus-like plant, blooming freely in pots during September.

Amaryllis belladonna, var. Hallii, is apparently a hardy form of the well-known Belladonna Lily; it is rare in cultivation, and should be more frequently used. A. belladonna itself is sometimes found fairly well established in the open air in this neighborhood. The bulbs should be planted deep in well-drained soil in a sheltered, but sunny, situation, and carefully covered in winter. The flowers come in August, after the leaves, which make their appearance the middle of May, have died down. Whenever, as is sometimes the case, there is a large stock of bulbs on hand, this experiment is well worth trying.

Sternbergia (Amaryllis) lutea, a beautiful bright yellow, Crocus-Amaryllis like flower, has proved hardy for several seasons in this vicinity. It blooms in October, but not profusely. It should have every advantage of soil and position, and good covering in winter. The leaf-growth, made while in flower and after, is apparently uninjured by frost.

Jamaica Plain, Mass. *B. M. Watson, Jr.*

Autumn-flowering Perennial Plants.—II.

At this time, and for some time past, a pretty specimen of Zauschneria Californica, the so-called Californian Fuchsia, has been in bloom here. It is a beautiful plant, forming a small bushy shrub about two feet high, with erect branches and drooping points. The sessile leaves are linear lanceolate, the lower ones opposite, and those on the branches are alternate. The flowers resemble those of a Fuchsia with exserted style and stamens; they are bright red, and are produced in loose spikes terminating the branches. The plants grown here are wintered over in a cold frame and planted out early in spring in a sunny border of a light sandy soil. This plant is apt to get long and leggy; but if the points of the young shoots are picked out once or twice during early summer it will form a neat, compact bush before the flowering season. It should be set in a sunny spot, where it will bloom early and continue until the frost destroys its blooms.

Zauschneria is easily propagated, it strikes easily from cuttings, which are taken in early autumn and wintered in a cold frame and planted into the border in April. It can also be increased by division of the old plants or by seeds. The seeds, if sown early in a little heat and grown on, will flower the same year. This plant is common in southern and lower California, and although it is such a fine autumn-blooming plant it is seldom seen in our gardens in the eastern states.

In a sheltered position, and where it is well covered over with Beech leaves in winter, there is a fine clump of Salvia azurea grandiflora at its best now. Few plants at this time are as handsome as this one, if well grown. Although there are many species of Salvia of the more tender sorts now in bloom, there are none so distinct and conspicuous as this one with its large azure-blue flowers. The plants in flower are about four feet high, and the lower part of the stem is clothed with lanceolate leaves, while the leaves on the upper part of the stem are linear. The flowers, which open in succession, are produced in spikes six to nine inches long, and last for a long time in bloom. I have seen this plant used in England as a pot-plant, and it was useful for brightening up the conservatory before the Chrysanthemums came into bloom. The plants used in this way were raised from cuttings in spring and grown on in pots. During the summer the young shoots were stopped once or twice, so as to make them nice, compact, bushy plants. When staked neatly and arranged in groups among other plants in the conservatory they were very effective. It is a native plant and is found growing from Nebraska to Texas and Colorado.

The plants that I have seen at different places of Phygelius Capensis have flowered much better than usual this season. At this time the long branching racemes of brilliant scarlet flowers are very ornamental. This is a half-shrubby plant, with much the habit of some of our Pentstemons, and grows about three feet high. It grows rapidly in a rich, light soil, and is increased either by division or by cuttings. It is a native of South Africa, and although not quite hardy, yet it deserves a place in a cold frame in winter, and can be planted out where desired in spring.

From August until the frost destroys its flowers in November, Ceratostigma plumbaginoides (Plumbago Larpentæ) is one mass of deep blue flowers. It is a neat dwarf plant, its wiry stems forming neat tufts from six to nine inches high. The dwarf habit suits it admirably as a rock-garden plant, and in sunny, warm borders it makes a good plant for the front row among other low-growing plants. It has stood in our rock-

garden for several winters. In some of our parks this should make an excellent bedding plant, as the colors of its flowers are so infrequently seen among this class of plants in the fall, and its foliage in autumn turns to singularly rich colors. It is so easily increased by division that a stock of plants can soon be obtained.

The Colchicums are useful autumn-flowering bulbous plants. They are very like Crocuses, and are often called Autumn Crocuses, but botanically they are far removed from each other; the Colchicum belongs to the Lily family, while the Crocus belongs to the Iris family. They are of easy culture, and should be planted in masses in late summer or early autumn. A sunny position, where they will dry up during the summer, and a light sandy soil suit them well. The most common species is C. autumnale, which begins to bloom about the middle of September and lasts a long time in bloom. The Crocus-like flowers appear before the leaves, and are of a pale purple color, from four to six inches high. There are many good varieties of this species, the best of them being Album, with pure white flowers; Roseum, reddish purple flowers; Striatum, purple and white flowers. The showiest species is C. speciosum; it has large cup-shaped flowers of a rich reddish purple color, and grows from six to nine inches high.

The Japanese Toad Flax, Tricyrtis hirta, is in good condition this year. As we have had no frost yet the foliage is green and healthy. Some seasons when we have early frost the foliage has a rusty appearance, which disfigures the plants. It is quite hardy here, and grows luxuriantly in a rather moist shady place and flowers profusely every season. The slender erect stems, which are terminated with curiously shaped pinkish blossoms, spotted with purplish black, are about three feet high.

Sedum Sieboldii, an elegant Japanese Stonecrop, is quite hardy here. It makes an excellent rock-garden plant when planted in an elevated position, where its semi-prostrate stems can hang over the stones, and in this way the rosy flowers, which are borne on the end of the stems, can be best seen.

Campanula pyramidalis is a strong, vigorous plant; its large pyramidal spikes of flowers rise to a height of five feet, and are a striking object when the plants are well grown. The flowers are blue or white, and as they come in succession they last for a long time in bloom. This plant has proved quite hardy here. It was planted in two different parts of the garden a year ago, and they flowered splendidly this summer and fall. I find they do best in a rather shady place, and, although they are perennials, I find they do best when treated as biennials.

The autumn-flowering Monkshood makes a good border-plant. It has stout stems three or four feet high with dark green leaves, and its bluish purple flowers are pleasing at this time.

The well-known Anemone Japonica and its varieties are charming and useful, and when planted in suitable positions they are among the richest ornaments a garden can possess in the autumn. A large number of perennials, such as Delphiniums, Gaillardias, Iceland Poppies, Pentstemons, Violas and many others, can be had in bloom in the autumn by sowing the seeds in January and planting out the seedlings into beds or borders in May.

Botanic Garden, Harvard University. *Robert Cameron.*

Forcing Vegetables.

OF the many garden vegetables suitable for forcing, Lettuce, Bush Beans, Radish and Spinach are among the easiest managed. Although the last is not profitable as a market crop, the private gardener who studies the tastes of the family he supplies, generally finds a dish of fresh Spinach much appreciated about the holiday season. All four vegetables require much the same general treatment as to soil, temperature and moisture, and they can be grown in different parts of the same house. This should be light and airy, so that the crops can have all the sunlight possible. The beds, which should be well up to the glass, may be about eight inches deep. In preparing the soil a layer of about two inches of well-rotted manure should be placed at the bottom, and the remainder should be a compost of two-thirds loam and one of leaf-mold. For the first crop of Lettuce the plants should be grown in frames from seed sown in the open ground about the middle of September, and ready for planting in the beds about the middle of October. Successional sowings may be made at intervals as required from that time until March, after which time they will probably be easier managed in frames. Plant six or seven inches apart, according to the variety grown, water sparingly at first, but more plentifully as the plants gain strength, applying it only to the roots, as overhead watering is apt to cause damping off when the water lodges in the centre of the plants. Boston Market, Big Boston and Black-seeded Simpson are all good for forcing.

Sowings of Beans, Radish and Spinach may be made in the beds at intervals as necessary from the beginning of October until March. The Early Valentine Bean, on account of its quick maturing, is, perhaps, the best all-round variety. French Breakfast and most of the turnip-rooted varieties of Radish are suitable, and the Round-leaved variety of Spinach is generally the best. The temperature of the house need not exceed fifty degrees by fire-heat at night, but it may be run up twenty degrees higher by sun-heat, and every opportunity should be taken for admitting fresh air without a cold draught. It should always be kept in mind that careful regulation of the temperature is the best precaution against mildew.

Tarrytown, N. Y. *William Scott.*

Quince-trees for Ornament.—None of our fruit-trees are more attractive in flower than the Quince, and the soft gray-green foliage gives it a distinct, individual appearance all summer; in autumn its abundant golden fruit makes it a type of all that is rich and productive, so that, whether standing alone on a lawn or in a shrubbery, it is always beautiful and graceful. The so-called Apple-quince assumes rather the most graceful form as a shrub, but in a warmer climate than mine, where the Pear-quince will ripen, it is less subject to rot and remains on the tree until late October. Quinces need deep soil, and they do better if they are kept constantly mulched. If the trees are kept well pruned they will bear more fruit and and be kept from that straggly form which they sometimes assume when left to themselves. The fruit can be left on until November, thus prolonging the season of the plant's beauty without injuring the fruit, which, indeed, is improved by remaining on the tree.

Clinton, N. Y. *E. P. P.*

Correspondence.

The Forests of Minnesota.

To the Editor of Garden and Forest:

Sir,—The state timber-lands of Minnesota have suffered seriously from bad management. The policy of lumbermen has been to strip the timber from lands as fast as possible and cheat the state as much as they were able when paying for the timber. I mean by this no reflection upon honest lumbermen, which class is very numerous; but, as a general thing, the honest ones do not cut much state timber. The result is that the state has not received on an average over fifty per cent. of the value of the timber cut from its lands.

The state lands are cut in advance of all other lands, the small and poorer timber generally being left standing. Then, as a general thing, the land is burned over the next year if dry enough, and all the young timber left is killed. We have a magnificent school fund, and are constantly looking for chances to invest it. If these timber-lands were carefully looked after and cared for they would be an investment that, with the increase in growth, would be many times better than any other. Winds and fires might destroy some timber, it is true, but damaging winds in the thick woods are not generally very extensive, and common forest-fires do comparatively little hurt to standing Pine timber.

In considering the question of forest-fires it should be borne in mind that the valuable timber is cut off in the winter, and the following season, especially if a dry one, the fires start—sometimes kindled by lumber pirates, as they have been called; sometimes by men in clearing; many by careless woodsmen, campers and tramps, and many, too, by sparks from locomotives. These fires generally kill all standing timber that has been cut among. In two to five years, if the land is not burned over again, a young growth of Poplar and Birch come up, in many cases mixed with young Pine, which makes a young forest in six to ten years thick enough to check common fires. Very few, if any, fires are started by men who own much Pine timber. We find that state lands are mostly all burned over within a year or two after being cut over, and in such cases we almost always find that the state has been cheated by the men who have done the cutting.

I can offer no sure remedy for these things, for in these unsettled woods laws are a dead letter. The only thing I can suggest is that a very heavy fine, half to go to the school fund, the other half to the informant, might do some good. Where the country is settled, roads should be four rods wide and should be cleared of all dead and rotten woods and seeded to grass, or cultivated. Along railroads the companies should

be compelled to clear their right of way of all old ties, trees, stumps and dead wood, and either to seed to grass or have the whole strip cultivated. The companies should be held responsible for fires set by engines and section foremen. Then every man should be compelled to put out any fires he starts or sees burning, for old trees and rotten wood may hold fire for weeks before it breaks out, if not attended to.

Such conflagrations as the Hinckley fire, in Pine County, cannot be stopped by any human effort after it once starts, for the heat and smoke will kill a man many hundred feet ahead of it. The territory burned over by that fire was twenty to thirty miles wide north and south, and forty to sixty miles from east to west. On this vast area there will not be trees enough in leaf next spring to cover four hundred acres as the average of the land was covered before the fire. About all of this land was once covered with a thick growth of Pine, which had mostly been cut; perhaps three or four hundred million feet were yet standing in the eastern portion of the district. This is now dead and black as coal. Four buildings are left on this whole tract of a thousand to twelve hundred square miles. There were from 100 to 125 farmers scattered through the burned district, but not one house or rod of fence remains to show where these farms once were, and the whole territory is a vast blackened desert. Tree-seeds will have to be planted before there will be any timber grow.

Taylor's Falls, Minn. *W. S. D.*

Cephalanthus occidentalis.

To the Editor of Garden and Forest:

Sir,—During the past summer my attention was drawn to an unusually vigorous group of Button-ball bushes, at Shelburne, New Hampshire, on the farm of Mr. A. E. Philbrook. The plants form a large clump and are notable, not only for their remarkable size, but because they are the only representatives of the species within a wide area of territory.

Prior to 1865 these bushes were growing on the edge of a small pond, and were not particularly noteworthy, except that they were isolated specimens. In that year the pond was filled up in order to provide sufficient area for a barn, and in the process the bushes were buried to a depth of three or four feet. They immediately pushed their way up through the overlying sand, and have continued to make a vigorous growth up to the present time, affording a most desirable shade for the poultry. The plants now range to a height of seven feet, the largest having a stem diameter of one and one-half inches. During the past summer the bloom was most abundant; the foliage was large, dark green and healthy. The plants, as a whole, made a most attractive appearance, and suggested the possibility of the usefulness of Cephalanthus occidentalis for ornamental purposes.

The history of these plants certainly shows that under careful treatment this shrub may be vastly improved, and that it may become worthy of a place among those already esteemed for decorative purposes. It is quite probable, of course, that the thrifty character of these plants is partly due to their location in a poultry-yard for the past thirty odd years, and the course of treatment to be followed in the improvement of this species for purposes of cultivation may be suggested by this fact.

McGill University. *D. P. Penhallow.*

Recent Publications.

The introduction to a bulletin on The Cultivated Raspberries of the United States, prepared by A. A. Crozier, and sent out by the Michigan Agricultural Experiment Station, is so interesting that we herewith present the historical parts of it in a somewhat condensed form.

The common Red Raspberry of Europe was cultivated by the Greeks and received its name, Rubus Idæus, from Mount Ida, where it flourished wild. From southern Europe it found its way into France, the low countries and England, and thence to the United States. The Red and White Antwerps belong to this species, and they have remained standards of excellence here for more than a century. These foreign sorts, although many of them bear abundantly large and well-flavored fruit, suffer from our cold winters and hot summer suns, and are adapted to only limited areas in this country. These defects directed attention to our native Raspberries. The Black Cap, Rubus occidentalis, was probably the first brought into cultivation. There is a species resembling it on the Pacific coast and the Rocky Mountains, Rubus leucodermis, which is quite as promising, but which as yet has furnished no variety adapted to general cultivation. The eastern species attains its greatest abundance and development in the rich valleys of Ohio and Indiana, and more of our cultivated varieties have come from this region than from any other source. The species ranges, however, from Missouri and Arkansas into New England, and the east has furnished more early varieties, and larger and later ones have originated in the west.

The ordinary wild form of the Black Cap had come to be cultivated quite largely for market near New York city before 1850. The first distinct variety on record is the Ohio Everbearing, which attracted attention as early as 1832, from its habit of fruiting to some extent upon the young canes in autumn, a habit which did not increase its value for market purposes. The yellow form of this berry, represented by the Golden Cap, was introduced about the same time. The Dolittle next came into prominence, and although it is a good variety, hardy and productive, it is not decidedly superior to the wild species. Eminent authorities, like Dr. Warder and Charles Downing, did not consider black caps suited for the most refined taste, and even now they generally bring a lower price in the market than the red varieties, although in Indianapolis and certain other places where black raspberries are supplied abundantly of fine quality, the demand is greater and more lasting than for the red varieties. In Boston the demand is almost wholly for red varieties, and black caps can hardly be sold.

Our native Red Raspberry has a wider range than the Black Cap, extending farther northward. It takes less kindly to cultivation, and we have few well-authenticated examples of its varieties brought into cultivation from the wild state. The evidence by which certain red varieties are classified as belonging to our native species are mainly structural, and not historical, since they have nearly all originated as chance or artificial seedlings upon cultivated grounds. That the blood of our native Red Raspberry is found largely in our most popular and hardy sorts is a fact, if fact it is, which rests mainly on circumstantial evidence. The Turner, for example, which is called a native sort, originated in the midst of many other seedlings grown on the seed of Red Antwerp. The Thwack is said to be a cross between Herstein and Brandywine, and, therefore, probably contains some foreign blood. The popular Cuthbert, usually regarded as a native species, originated in a plot of an English variety known as the Hudson River Antwerp. It seems possible, therefore, that American seedlings of European sorts and hybridization from the same foreign source may have been more potent factors in the development of our garden Raspberries than has been supposed, and that the characteristic features of the foreign species, such as lack of hardiness, small light-colored canes, numerous prickles, thick rugose leaves, may have become so far modified by cultivation and crossing that one cannot always be certain upon inspection alone as to the parentage of any given variety.

None of our popular varieties are known to be hybrids; but some promising work in this direction has been done by Brinkle, Arnold, Caywood, Burbank and others. There is an interesting group of probable natural hybrids between the native red and black species known as the Purple Cane group. Plants of this class are occasionally found growing wild where Red Raspberries and Black Caps grow. This type has been described by Peck under the name of Rubus neglectus, but later botanists consider it of hybrid origin from its intermediate character, its location near the two species, and from the fact that it never grows anywhere in large numbers as a true species would likely do. The plants are more vigorous and often more productive than either of their supposed parents; the canes are upright, slightly arching, generally reddish purple, with few and small spines. The plants produce few or no suckers, and, although rooting at the tips of the canes when layered under cultivation, are not known to do so naturally. The purplish fruit is tart and larger than that of either the black or red species. There are doubtful forms of this class which approach more nearly the red species, and differ from it in having darker fruit. The once popular Philadelphia is of this class. The old Purple Cane was cultivated ninety years ago in the vicinity of our eastern cities, and was undoubtedly the first American species introduced into gardens, and it remained for more than half a century the leading variety over a great part of the country. The Shaffer is another prominent Raspberry of the same group, and there are a score of others of the same general character. These varieties are superior for canning and drying, but their dull color makes them less attractive to the eye, and thus diminishes their market value. The plants, however, are hardy, vigorous, productive of large fruit and easy to cultivate.

Notes.

There is a lumber-mill in Christiana, Norway, which has a capacity of a million feet daily.

The *Gardeners' Chronicle* notes a robust variety of our native Helianthus rigidus, which has been named Miss Mellish. This plant grows twice as high as the typical form, bears larger and often semi-double flower-heads of a rich clear yellow, which appear three or four weeks after those of the ordinary kind.

The foliage of the Forsythia in autumn is remarkably distinct, turning to a very dark plum color, or sometimes a dark maroon or reddish brown. This year the moist autumn has opened many of the flower-buds that had ripened early during the drought, and the deep yellow flowers, appearing together with the singularly dark leaves, make a combination as striking as it is rare.

A recent visitor to the Botanical Gardens at Buitenzorg, Java, in speaking of the astonishing growth of plants in that climate, gives as an example that some Palms of the genus Oreodoxa, which were planted when quite young to make a border to one of the walks, grew in five years to a height of thirty-two feet, while some species of Albizzia in the same time attained a height of more than sixty feet.

By an annoying oversight last week the removal of a decimal point multiplied the weight of a block of mahogany imported by Nesmith Brothers, of Greenpoint, New York, by one hundred, making it 2,166 tons, instead of 21.66. A recent number of the *Scientific American* contains an illustration of half of this magnificent piece of wood after it was sawed in two, and a good idea of its proportions can be had from the men who stand by it. Out of this half of the original stick, if sawed into two-inch plank, twenty-eight tables, each twenty-two and a half feet long and five feet wide, could have been made.

We have received a neat little dictionary of eighty-three pages in paper covers, consisting of botanical and horticultural terms, arranged in five columns on a page, the first column being the Latin or Greek words most generally used in horticulture and botany, arranged alphabetically. Opposite these, and in four other columns, are placed the equivalents of each word in French, English, German and Dutch. Something like twenty-five hundred words are thus arranged, with their synonyms, in five languages, and the book will, no doubt, prove a convenience to amateurs who wish to consult foreign catalogues, and many others. It has been prepared by A. M. C. Jonkindt Coninck, of Bussum, near Amsterdam.

Portraits of two new Plums originated by Luther Burbank are given in the last number of the *Pacific Rural Press*. One of these is named the Wickson, and is from seed of Kelsey, fertilized with pollen from Satsuma. As it ripens, the fruit turns from a deep cherry-red to a rich uniform claret color. The translucent amber-colored flesh is said to be juicy, with a striking and agreeable flavor. It has notably good qualities both for keeping and shipping. The other one is named Giant, and is from seed of Petite Prune d'Agen, pollinated with the Hungarian Prune. The plums average from one and a half to two ounces in weight, and it is larger, sweeter and finer in texture than the Hungarian. The color is dark crimson on a yellow ground, and the flesh is yellow. When it is dried it makes a handsome prune, averaging about thirty-five to the pound. These two Plums are to be distributed this year in the form of cions for grafting.

Mr. R. D. Blackmore, who is a horticulturist of note, as well as a famous novelist, writes to the London *Times* in a very discouraging way as to the prospects of fruit-growing in England. His statement is that when the apple crop of England is good the price is contemptible. One season he sold six hundred bushels at one shilling a bushel and lost his baskets. In forty years' experience as a fruit-grower he has only made both ends meet twice, and at the time when the letter was written he had hundreds of bushels of large pears lying on the ground because they would not pay for packing and transportation. It is fair to add that the great fruit show just held at the Crystal Palace was a most creditable exhibition, while the Conference Hall was crowded for three days. The temper of the discussions was by no means a gloomy one, and the prevailing opinion seemed to be that there was still a margin of profit for the fruit-grower in Great Britain.

Last year Mr. Watson, in one of his letters (see vol. v., page 486), spoke of Richardia Rehmanni, which was offered for sale by some Dutch nurserymen as a rosy-flowered Calla, and stated that probably the same plant had already bloomed in England and showed a very slight tint of pink. The spathe was rather smaller than that of the well-known Richardia Æthiopica, but the leaves were lanceolate instead of sagittate, and about a foot long. A correspondent of the *Gardeners' Chronicle* now states that the plant has flowered in Kew and shows only a flush of rose inside of the upper portion of the spathe. Very plainly, the flower does not color as deeply in England as it does in Natal, but it is a distinct and pretty plant, although, unless it would color better under our bright sunlight, Americans need not expect that the plant will justify its name as a pink-flowered Calla. If any of our readers have flowered this plant we should be glad to have an account of their experience.

The Jerusalem Artichoke, which is the tuberous root of one of our native perennial Sunflowers, Helianthus tuberosus, is becoming more highly appreciated than it once was as a food for animals, because a crop can be produced in such extremely dry weather as has prevailed for the past two years, when other crops fail. A correspondent of the *Country Gentleman*, writing from Indiana, states that the yield of artichokes in good soil ranges from eight hundred to one thousand bushels an acre, which seems a large estimate. His method of feeding is to turn hogs into the field after the frost has killed the stalks and allow them to root the tubers from the ground. Part of the crop is fenced off until spring when pigs are turned in to be fattened for the early market, while quantities, which are pitted in the fall, make good food for cows, calves and colts. The variety known as White Jerusalem is the one used, and is said to resemble in color and taste the heart of cabbage. After the first planting there are always enough tubers left in the ground to produce a crop the following year.

The season for Japanese persimmons is about over, although a few small ones can still be seen occasionally on fruit-stands of the best class. During the month of September, when this fruit ought to have been most abundant, it has been impossible to find any in New York. One of the largest shippers from Volusia County, Florida, Mr. J. B. Odum, writes in reply to some inquiries that the crop in his section was a partial failure, and, although the fruit could have been shipped in considerable quantities, the prices received last year offered no encouragement to send them so far north. It is a difficult matter to get this fruit to New York in sound condition, but this trouble could be overcome if there was a sufficient demand to warrant the extra expense. Last year it looked as if the good qualities of these persimmons would soon make them common in our markets, but people are slow to try new fruits, and this really excellent one has certainly not yet secured a standing here. Mr. Odum writes that the late severe storms in Florida have badly injured the remnant of the crop which remained ungathered.

While the prices of American apples in England are about fifty cents lower per barrel than they were a few weeks ago, a brisk demand continues, notwithstanding the large quantities now going forward. Whereas prices in New York last week ranged from $1.50 to $3.00 a barrel, the same varieties and grades brought $2.64 to $5.28 in the foreign markets. In the corresponding week last year red apples brought from $3.88 to $6.50 abroad. New York alone shipped 20,574 barrels of apples last week against only 178 barrels a year ago, and while but 1,119 barrels had left the United States and Canada by the middle of last October, nearly 250,000 barrels have this season already left these countries for foreign sales. It is said that many growers forward their apples to Europe in preference to selling in the home markets because of the prompt settlement of accounts, payment being received by the farmer within fifteen days after the fruit leaves New York. A few Newtown Pippins from Long Island are already shown in W. & C. Smith's fruit-store on Liberty Street, and in about a fortnight these apples will be forwarded to our markets from the celebrated orchards of Virginia. In striking contrast with these small dull green apples, are the large King apples, with their stripes and splashes of crimson, and the more showy Jonathans, of roundish ovate form and deep wine color. A few Bilyeu peaches from Cornwall-on-the-Hudson sell for $1.50 to $2.50 for a six-quart basket. Immense Salway peaches and very large Bartlett pears from California bring seventy-five cents to $1.00 a dozen. Seckel pears are still plentiful, but are small and attract little attention. A large supply of new crop Smyrna figs is making low prices for this fruit. Since the importing season began, about two weeks ago, 2,000,000 pounds have been received here. A few barrels of Almeria grapes have already arrived.